4-1

54.) Produce the ODA's Technical *Standard Manual* for Dairy Manure Management Plan as required under Nutrient Management Technical Standard regulations.

RESPONSE:

The Director specifically objects to this Discovery Request as not relevant to the subject matter involved in the pending action, vague and imposes an obligation upon the Director to provide information that is unavailable to the Director or to produce documents not within the legal control, custody or possession of the Director. The Director is not aware of such a manual.

55.) Produce all documents including notes from Kevin Elder's November 2006 meeting with (b)(6)

RESPONSE:

Relevant, non-privileged documents have been previously produced, are in the Certified Record (See Certified Record p. 123) and will be made available for inspection and copying upon request.

56.) Produce all documents and correspondence to and from the ODA regarding changes to the ORC, OAC and LEPP regulations since the inception of this permit.

RESPONSE:

The Director specifically objects to this Discovery Request as overly broad, vague, privileged, not relevant and not likely to lead to evidence relevant to the subject matter involved in the pending action because the Appellants cannot challenge rules in this proceeding.

If your request is to ensure that you have access to current rules or a version of rules that were in existence at the time when the Director issued the permit, the rules on the website show the current rules and the end of the rule shows when the rule was amended. You can access the LEPP website for the rules at:
http://www.ohioagriculture.gov/lepp/curr/rules/2005%20Rules/lepp-rl-index-05.stm.

You can also access the rules at: http://codes.ohio.gov/oac

4-2

Larry Vickie Askins

From: Bernstein, Jon [jon.bernstein@epa.state.oh.us]
Sent: Wednesday, August 10, 2011 9:12 AM
To: Larry & Vickie Askins
Subject: RE: Request please

Categories: Red Category

Vickie,

I don't think you will find any technical standards documents per se.

Basically, Ohio EPA uses the conditions of CAFO NPDES permits as its technical standards, ODNR uses NRCS Standard 633 as its technical standards, and ODA uses its rules as its technical standards. Ohio EPA's permits and ODA's rules are very similar to 633.

http://www.ohleap.org/FactSheets/1004/OH633_Waste_Util_June2003.pdf

Jon Bernstein, E.I.
PTI, Compliance Assistance, & CAFO Unit
Division of Surface Water
Ohio Environmental Protection Agency
P.O. Box 1049
Columbus, OH 43216-1049
(614) 728-2397

From: Larry & Vickie Askins (b)(6)
Sent: Thursday, August 04,
To: Bernstein, Jon
Subject: RE: Request please

Hi Jon,

I've Googled and searched thru many documents but I haven't found Ohio's "technical standards".

If it's possible, I would be happy to pay for a paper copy; otherwise, would you please send me the site for this document?

Sorry to bother you again about this.
Vickie

From: Bernstein, Jon [mailto:jon.bernstein@epa.state.oh.us]
Sent: Thursday, July 21, 2011 11:33 AM
To: Larry & Vickie Askins
Subject: RE: Request please

Hi Vickie,

Ohio EPA uses the conditions of CAFO NPDES permits as its technical standards for nutrient management.

Enclosure

Questions

1. The Effluent Limitations Guidelines and New Source Performance Standards for the concentrated animal feeding operations (CAFO) point source category, 40 CFR part 412, prohibit dry-weather discharges of manure, litter, and process wastewater (manure) from land application areas under the control Large CAFOs in the cattle, swine, poultry and veal subcategories. *See:* 71 *Federal Register* 37769, June 30, 2006. Does chapter 903 of the Ohio Revised Code or chapter 901 of the Ohio Administrative Code require National Pollutant Discharge Elimination System (NPDES) permits to be issued by the Ohio Department of Agriculture (ODA) to prohibit discharges from land application areas when such discharges are not agricultural storm water as defined in rule 901:10-1-01(D)?

ODA Response: Yes. There is a prohibition for dry weather discharges from production areas (see 40 CFR § 412.31(a) and 40 CFR § 412.43(a) for swine, with reference to BPT facilities). Ohio's rules governing cattle (901:10-3-04(A)(1)) and swine, poultry, and veal operations (901:10-3-06(A)(1)) similarly prohibit discharges from production areas. As for the land application areas, 40 CFR § 412.31(b) states: "Discharges from land application areas are subject to the following requirements: (1) Develop and implement the best management practices specified in § 412.4; (2) Maintain the records specified at § 412.37(c)...." 40 CFR §412.4 and § 412.37(c) describe the best management practices of setbacks, phosphorus and nitrogen application rates, compliance alternatives, inspections, etc., that are described in Ohio's 901:10-2-14 and that are designed to prevent dry weather discharges. 40 CFR § 412.37's recordkeeping requirements, which relate to keeping track of weather conditions and dates of applications, are covered in OAC 901:10-2-08 and 901:10-2-16.

Ohio's cattle effluent limitation rule is 901:10-3-04. That rule, like the federal rule 40 CFR § 412.31, has one part dealing with production area discharges and one part dealing with land application areas. Ohio's equivalent to 40 CFR 412.31(b) is 901:10-3-04(A)(2). Ohio's rule provides as follows:

> **"(2) For concentrated animal feeding operation land application areas. Discharges from land application areas are subject to the following requirements:**
> **(a) Develop and implement the best management practices set forth for the manure management plan in rule 901:10-2-07(A)(1) of the Administrative Code;**
> **(b) Maintain the records specified in rule 901:10-2-16 of the Administrative Code...."**

OAC 901:10-2-07(A), which is referenced in 901:10-3-04(A)(2), provides as follows:

> **"The application for a permit to operate and for a NPDES permit shall contain the following information:**
> **(1) A manure management plan that is developed and implemented to comply with the best management practices set forth in rules 901:10-2-08 to 901:10-2-11, 901:10-2-13 to 901:10-2-16 and 901:10-2-18 of the Administrative Code, and**

901:10-2-10 Contents of manure management plan: manure characterization.

4A-

The manure management plan shall contain information on manure to allow the owner or operator to plan for nutrient utilization at recommended agronomic rates and to minimize nutrient runoff that may impact waters of the state.

(A) Manure characterization shall describe the manure by the per cent of liquid content, the per cent of solids content and/or manure density and shall follow the sampling procedures for manure sampling and analysis in "Recommended Methods of Manure Analysis" (a 3769), university of Wisconsin extension, 2003. For an existing facility that will continue to have similar manure storage or treatment facilities with no change in treatment technology, the manure shall be characterized utilizing an actual sample from the facility. If the owner or operator is proposing a new facility, new manure storage or treatment facility, or a change in treatment technology, then the manure shall be characterized by using the table appended to this rule or by utilizing a representative analysis from a similar type facility with a similar type of manure storage or treatment facility to characterize manure, the owner or operator shall submit this alternative manure data along with the identification of the source of the data. Manure characterization shall include the following:

(1) Total manure production quantified:

(a) Pounds per day; or

(b) Tons per year; or

(c) Cubic yards per day; or

(d) Gallons per day.

(2) Nutrient content quantified:

(a) Pounds per day; and/or

(b) Pounds per ton; or

(c) Pounds per one thousand gallons.

(B) The manure management plan shall contain an estimate, supported by calculations of the quantity and total nutrient content of manure produced, stored and treated during a twelve month period along with a schedule for manure removal or manure transfer for purposes of land application. Manure may be removed based on results of inspections conducted pursuant to paragraph (A)(4)(f) of rule 901:10-2-08 of the Administrative Code or in accordance with distribution and utilization methods.

(C) At a minimum, manure from each manure storage or treatment facility shall be analyzed annually for the following: total nitrogen; ammonium nitrogen; organic nitrogen; phosphorus; potassium; and per cent total solids.

(D) In addition to the minimum requirements for annual manure analysis in paragraphs (A) to (C) of this rule, any manure with wastes that are process waste water, shall be characterized annually by the owner or operator by utilizing an actual sample from the facility, provided, however that for a permit to install application as required by paragraph (C) of rule 901:10-2-01 of the Administrative Code or for an operational change to be made to the manure management plan in accordance with rule 901:10-1-09 of the Administrative Code, the owner or operator may utilize a sample from a similar facility or by relying upon on existing published or documented data.

(E) Results of analyses and estimates conducted in paragraphs (A) to (D) of this rule shall be recorded in the operating record and shall be submitted as part of the annual report to the director required by rule 901:10-2-

Criteria for Nitrogen via Commercial Fertilizer Sources:

On fields with a "High Nitrogen Leaching Potential" apply the recommended nitrogen for spring planted crops prior to planting spring crops or split applications between pre-plant and a sidedress application. For perennial crops split the recommended application between two or three periods including early spring, early summer, or late summer. For fall planted crops apply 20-30 Lbs/Ac of the recommended amount in the fall and the remainder in the spring. Nitrogen may be fall applied for spring planted crops following the guidance in Table 1 of this standard.

Criteria for Nitrogen Application via Manure (during Summer and Fall Periods):

On fields with a "High Nitrogen Leaching Potential" (rating more than 10) and with no growing crop, manure and other organic by-products application is to be limited to 50 Lbs/ac of Nitrogen (Ammonium N + 1/3 of the Organic N) calculated at the time of application from June to October 1st to limit nitrogen leaching. When a grass/legume cover crop is growing or established immediately after waste application, manure or other organic by-products can be applied prior to October 1st at the recommended Nitrogen rate for the next non-legume crop or the nitrogen removal rate for the next legume (maximum 150 Lbs/ac) crop. See Table 1, Section 12 - Determining the Most Limiting Manure Application Rates.

Estimated Manure Nutrient Analysis

Storage ID	Measured Total N	Measured NH4-N	Nitrogen OM*	P2O5	K2O5	Units	Source
Storage Pond	17.7	7	10.7	8	15	Lb/1000 Gal	(b)(6) Dairy in Michigan
Sand Settling Basin	5.9	1.0	4.9	5.5	4.9	Lb/Ton	(b)(6) Dairy in Michigan

*The program does not allow for this value to be included.

Manure Application Plan

Notes and Assumptions:
- **Avail. N*** is the estimated amount of nitrogen remaining after losses due to application method and timing.
- For liquid manure applications, see Section 14, Table 1.
- When liquid manure is applied to fields with tile, drainage tile plugs (or similar devices) shall be available on-site to plug tile outlets should manure begin to flow from the tile outlets.

(b)(6) DAIRY MANURE ANALYTICAL DATA SUMMARY

Revised 3-14-06

Sample Description	Total Nitrogen (TKN)	Ammonia Nitrogen	Organic Nitrogen	Phosphorus as P2O5	Potassium as K2O	Remarks
	lbs / ton	lbs / ton	lbs / ton	lbs / ton	lbs / ton	
SAND SETTLING BASIN						
Liquid manure sample from sand pit*	4.2	-	-	1.4	3.0	(b) Dairy, (b)(6) Ohio City, Ohio 45874: Scrape dairy with separate silage pond; runoff from sand dewatering pad discharges to settling basin (overflows by gravity to the holding pond)
Liquid manure sample from agitated sand pit*	2.7	-	-	0.9	2.6	(b)(6) Dairy, (b)(6) Haviland, Ohio 45851: Water from milking parlor is discharged directly to a holding pond; settling basin overflows by gravity to the holding pond
Liquid manure sample - sand pit	5.9	1.0	4.9	5.5		(b)(6) Dairy Farm II, (b)(6) Hudson, MI 49247
Liquid manure sample from sand pit	7.0	3.2	3.8	4.4		2004 sample from (b)(6) Dairy, (b)(6) Lyons, Ohio 43533
Average Values	4.9	2.1	4.4	3.0		

*Conversion factor for # / 1000 gal to # / ton assuming a density of 102 # / cf = 0.1467

Sample Description	Total Nitrogen (TKN)	Ammonia Nitrogen	Organic Nitrogen	Phosphorus as P2O5	Potassium as K2O	Remarks
	lbs / 10^3 gal	lbs / 10^3 gal	lbs / 10^3 gal	lbs / 10^3 gal	lbs / 10^3 gal	
STORAGE POND						
Liquid manure sample from agitated storage pond	4.2	2.5	-	1.1	3.4	(b) Dairy, (b)(6) Ohio City, Ohio 45874: Scrape dairy with separate silage pond; runoff from sand dewatering pad discharges to settling basin (overflows by gravity to the holding pond)
Liquid manure sample from agitated storage pond (mixed 2 days before sampling)	18.3	-	-	20.9	13.9	(b)(6) Dairy, (b)(6) South Solon, Ohio 43153: separate silage pond; runoff from sand dewatering pad discharges to settling basin (overflows by gravity to the holding pond)
Liquid manure sample from storage pond	12.7	-	-	3.8	19.8	(b)(6) Dairy, (b)(6) Haviland, Ohio 45851: Water from milking parlor is discharged directly to a holding pond; settling basin overflows by gravity to the holding pond
Liquid manure sample from storage pond	9.4	7.6	1.8	2.5	14.4	2004 sample from (b)(6) Dairy, (b)(6) Lyons, Ohio 43533
Liquid manure sample from storage pond	17.7	7	10.7	8	15	(b)(6) Dairy Farm II, (b)(6) Hudson, MI 49247
Liquid manure sample from storage pond	15.6	8.3	7.3	3.9	11.1	(b)(6) Dairy LLC, (b)(6) Frankton, IN 46044
Liquid manure sample from storage pond	12.8	7.9	4.9	3.7	10.1	(b)(6) Dairy, (b)(6) Andrews, IN 46702
Average Values	13.6	7.7	6.2	4.4	14.1	

Data not used to determine average values

NOTE: Latest revisions noted in blue

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Ohio Department of Agriculture
Final Permit to Install and Draft Permit to Operate

Final Permit to Install No. REY-0002.PI002.WOOD
Final Permit to Operate No. REY-0002.PO002.WOOD

PUBLIC NOTICE

Ohio Department of Agriculture
Livestock Environmental Permitting Program
8995 East Main Street
Reynoldsburg, Ohio 43068
614-387-0470

Date of Issue of Public Notice: , 2006
Name and address of applicant: (b)(6) Dairy, (b)(6) Custar, Ohio 43511
Name and address of facility: (b)(6) Dairy, LLC, (b)(6) Custar, Ohio 43511.

Public notice is hereby given that the Ohio Department of Agriculture issued (b)(6) Dairy, LLC a final Permit to Install. The final Permit to Install is for one additional freestall barn capable of housing (b)(6) mature dairy cows. The dairy is expanding from (b)(6) mature diary cows to a total design capacity of (b)(6) cows. Construction of a new manure storage pond is proposed, with a capacity of 6.9 million gallons. Additional storage will be provided for the separated sand laden manure and approximately 1.7 million gallons of liquid volume will be added to the manure storage pond previously permitted.

Public notice is hereby given that the Ohio Department of Agriculture issued (b)(6) Dairy, LLC a final Permit to Operate for the entire farm. The final Permit to Operate regulates operations with plans for manure management, insect and rodent control, mortality management, and emergency response. This permit is valid for a five-year period, at which time the owner would be required to renew the operating permit.

The final Permit to Install and final Permit to Operate can be appealed within 30 days to the Environmental Review Appeals Commission, 309 South Fourth Street, Room 222, Columbus, Ohio 43215. A copy of the appeal must be served on the Director of Agriculture within three days after filing the appeal with Environmental Review Appeals Commission.

- end -

(b)(6)

COWS

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SECTION 16
Farm Nutrient Budget

Crop nutrient utilization potential for land that can receive manure.

Starting Crop Year 2005 *Number of Plan Years* 5

Average Annual Nutrient Utilization

Crop	Acres	Nitrogen*	P2O5**	K2O**
Alfalfa	310.24	46,536	25,004	96,169
Corn	296.04	51,781	18,621	13,588
Corn silage	410.12	52,102	28,756	69,712
Soybean	413.68	62,052	16,567	28,992
Wheat	243.52	18,789	10,523	6,180

	Acres	Nitrogen*	P2O5**	K2O**
All Crops	1,673.60	231,260	99,471	214,641

Per Acre	Nitrogen*	P2O5**	K2O**
All Crops	138	59	128

Total Manure Quantity and Total Estimated Nutrients

Type Of Manure	Annual Collected	Units	Avail. N***	P2O5	K2O**
Liquid Manure	11,890,290	Gal	121,281	22	178,354
Solid Manure	6,077	Ton	19,446	24	29,777

	Avail. N***	P2O5	K2O**
All Manure	140,727	128,546	208,132

	Avail. N***	P2O5	K2O**
Nutrient Balance (Supplied By Manure - Crop Needs)	-90,533	29,075	-6,510

	Avail. N***	P2O5	K2O
Nutrient Balance If No Manure On Legumes	19,105	70,738	118,705

	Acres
Average Acres Needed To Utilize Available Manure P2O5 At Crop Removal	2,163

	Acres
Additional Acres Needed To Apply Manure At P2O5 Crop Removal	489

	Acres
Average Acres Needed To Utilize Available Manure N At Crop Need (All Crops)	1,018

	Acres
Average Acres Needed To Utilize Available Manure N At Crop Need (Non-Legumes)	1,091

(b)(6) COWS

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Section 6
Farm Nutrient Budget

Starting Crop Year 2006 *Number of Plan Years* 5

Average Annual Nutrient Utilization

Crop	Acres	Nitrogen*	P2O5**	K2O**
Alfalfa	303.44	45,516	23,668	91,032
Corn	511.30	92,111	32,161	23,469
Corn silage	426.06	53,597	29,526	71,578
Soybean	724.78	108,717	28,991	50,735
Wheat	211.82	15,887	9,341	5,486

	Acres	Nitrogen*	P2O5**	K2O**
All Crops	2,177.40	315,828	123,688	242,299

Per Acre	Nitrogen*	P2O5**	K2O**
All Crops	145	57	111

Total Manure Quantity and Total Estimated Nutrients

Type Of Manure	Annual Collected	Units	Avail. N		K2O
Liquid Manure	22,139,787	Gal	210,328	,415	312,171
Solid Manure	13,140	Ton	47,304	,420	48,618

	Avail. N***	P2O5	K2O
All Manure	257,632	136,835	360,789

	Avail. N***	P2O5	K2O
Nutrient Balance (Supplied By Manure - Crop Needs)	-58,196	13,148	118,490

	Avail. N***	P2O5	K2O
Nutrient Balance If No Manure On Legumes	96,037	65,807	260,256

	Acres
Average Acres Needed To Utilize Available Manure P2O5 At Crop Removal	2,409

	Acres
Additional Acres Needed To Apply Manure At P2O5 Crop Removal	231

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ANIMAL CAPACITY

NOTE: Maximum Design Capacity means the total number of stalls ... tal numbers of animal confinement capacity. Maximum Design Capacity refers to buildings ... ximum Design Capacity does NOT refer to the Total Storage Volume of manure.

Animal Type	Minimum Population CAFF/MCAFF	Existing Population (Leave ... k if new)	Maximum Design Capacity
CATTLE			
• Slaughter and Feeder	1,000/10,000		
• Mature Cow (Milked/Dry)	700/7,000	(b)(6)	
• Veal	1,000/10,000		
SWINE			
• Over 55 Pounds	2,500/25,000		
• Under 55 Pounds	10,000/100,000		
HORSE			
• Horses	500/5,000		
SHEEP			
• Sheep or Lamb	10,000/100,000		
TURKEYS			
• Turkey	55,000/550,000		
CHICKENS			
• Laying Hen or Broiler	82,000/820,000		
• Pullets	125,000/1,250,000		
DUCKS			
• Ducks	35,000/350,000		
OTHER			
TOTAL ANIMAL CAPACITY Add all numbers in Column 1 for Existing Total Add all numbers in Column 2 for Design Total		**Existing Total** (b)(6)	**Final Total** (b)(6)

PAYMENT REQUIRED

Remittance of the applicable fee is enclosed payable to: Ohio Department of Agriculture
Payment by check or money order only:

Payment Method: ☐ Money Order ☒ Check *Number:*

Amount: $ __ , 2 0 0 . 0 0

SECTION 5
Farm Nutrient Budget

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Starting Crop Year 2006 *Number of Plan Years* 5

Average Annual Nutrient Utilization

Crop	Acres	Nitrogen*	P_2O_5**	K_2O**
Alfalfa	419.30	62,895	31,998	123,070
Corn	426.54	79,493	27,248	19,884
Corn silage	773.28	149,831	71,451	173,215
Soybean	517.60	77,640	20,741	36,297
Wheat	247.58	20,892	11,650	6,842

	Acres	Nitrogen*	P_2O_5**	K_2O**
All Crops	2,384.30	390,751	163,089	359,308

Per Acre	Nitrogen*	P_2O_5**	K_2O**
All Crops	164	68	151

Total Manure Quantity and Total Estimated Nutrients

Type Of Manure	Annual Collected	Units	Avail. N***	P_2O_5**	K_2O**
Liquid Manure	25,929,335	Gal	246,329	114,089	365,604
Solid Manure	14,454	Ton	49,144	3,362	53,480

	Avail. N***	P_2O_5**	K_2O**
All Manure	295,472	157,451	419,083

	Avail. N***	P_2O_5**	K_2O**
Nutrient Balance (Supplied By Manure - Crop Needs)	-95,279	-5,638	59,776

	Avail. N***	P_2O_5**	K_2O**
Nutrient Balance If No Manure On Legumes	45,256	47,102	219,143

	Acres
Average Acres Needed To Utilize Available Manure P_2O_5 At Crop Removal	2,302

	Acres
Additional Acres Needed To Apply Manure At P_2O_5 Crop Removal	0

	Acres
Average Acres Needed To Utilize Available Manure N At Crop Need (All Crops)	1,803

	Acres
Average Acres Needed To Utilize Available Manure N At Crop Need (Non-Legumes)	1,709

* Based on recommended nitrogen for the planned non-legumes and 150 lbs/ac/yr of nitrogen for the planned legumes.

** Based on crop removal rates.

*** Based on maximum nitrogen available the first year after application.

4A-

SECTION 5
Farm Nutrient Budget

A. Crop nutrient utilization potential for land that can receive manure.

Starting Crop Year 2008 *Number of Plan Years* 5

Crop	Acres	Nitrogen*	P2O5**	K2O**
Alfalfa	352.30	52,845	26,772	102,970
Corn	297.24	54,079	18,681	13,632
Corn silage	587.12	114,928	54,250	131,515
Soybean	341.24	51,186	15,873	27,778
Wheat	187.40	15,807	8,816	5,178

	Acres	Nitrogen*	P2O5**	K2O**
All Crops	1,765.30	288,845	124,393	281,073

Per Acre	Nitrogen*	P2	K2O**
All Crops	164	70	159

Total Manure Quantity and Total Estimated Nutrients

Type Of Manure	Annual Collected	Units	Avail. N***	P	K2O
Liquid Manure	27,288,064	Gal	259,237	067	384,762
Solid Manure	3,880	Ton	16,296	208	3,492

	Avail. N***	P2O5	K2O
All Manure	275,533	126,275	388,254

	Avail. N***	P2O5	K2O
Nutrient Balance (Supplied By Manure - Crop Needs)	-13,312	1,883	107,181

	Avail. N***	P2O5	K2O
Nutrient Balance If No Manure On Legumes	90,719	44,528	237,929

	Acres
Average Acres Needed To Utilize Available Manure P2O5 At Crop Removal	1,792

	Acres
Additional Acres Needed To Apply Manure At P2O5 Crop Removal	27

	Acres
Average Acres Needed To Utilize Available Manure N At Crop Need (All Crops)	1,684

	Acres
Average Acres Needed To Utilize Available Manure N At Crop Need (Non-Legumes)	1,598

*Based on recommended nitrogen for the planned non-legumes and 150 lbs/ac/yr of nitrogen for the planned legumes.

** Based on crop removal rates.

*** Based on maximum nitrogen available the first year after application.

Nutrient values for manure do not include any reductions for Anaerobic Treatment .

Appendix to rules 901:10-2-04 and 901:10-2-10: Daily manure production and characteristics, as-excreted (per head per day)

Manure Production Characteristics

Values are as-produced estimations and ~~are~~ do not reflect any treatment. Use these values only for planning purposes. Values do not include bedding. The actual characteristics of manure can vary ~~±~~30% from table values due to genetics, dietary options and variations in feed nutrient concentration, animal performance, and individual farm management. Increase solids and nutrients by 4% for each 1% feed wasted above 5%.

Animal	Size[a] (lbs)	Total Measure of Manure[b] Quantity *Volume and/or Weight of Manure* (lb/day)	(ft³/day)	(gal/day)	Water[c] %	Density[c] (lb/ft³)	Total Solids[d] (lb/day)	Volatile Solids[c] (lb/day)	BOD_{52} (lb/day)	Nutrient Content (lb/day) (N)[d]	(P_2O_5)[d]	(K_2O)
Dairy Cattle												
Calf	150	12~~13~~	0.18~~0.20~~	1.38~~1.5~~	88	65	1.4	1.2	0.19~~0.20~~	0.06~~0.05~~	0.01[e]	0.05~~0.04~~
	250	20~~24~~	0.31~~0.32~~	2.30~~2.4~~	88	65	2.4~~2.3~~	2.0~~1.9~~	0.31~~0.33~~	0.11~~0.08~~	0.02[e]	0.09~~0.07~~
Heifer	750	45~~65~~	0.70~~1.0~~	5.21~~7.8~~	88	65	6.7~~6.8~~	5.7~~5.8~~	0.69~~1.0~~	0.23	0.08[e]~~0.07~~	0.23~~0.22~~
	1,000	60	0.93	6.95	88	65	8.9	7.6	0.92	0.30	0.10[e]	0.31
Lactating cow	1,000	111~~108~~	1.79~~1.7~~	13.36~~12.7~~	88	62	14.3~~14.0~~	12.1~~8.5~~	1.67~~1.69~~	0.72~~0.58~~	0.37[e]~~0.30~~	0.40~~0.34~~
	1,400	155~~145~~	2.52~~2.4~~	18.70~~17.7~~	88	62	20.0~~14.0~~	17.0~~11.9~~	2.34~~2.21~~	1.01~~0.82~~	0.52[e]~~0.42~~	0.57~~0.48~~
Dry cow	1,000	5182	0.82~~1.30~~	6.14~~9.7~~	88	62	6.5~~9.5~~	5.58~~7~~	0.75~~1.20~~	0.30~~0.36~~	0.11[e]	0.24~~0.28~~
	1,400	71~~145~~	1.15~~1.82~~	8.60~~13.6~~	88	62	9.1~~13.3~~	7.7~~11.3~~	1.04~~1.70~~	0.42~~0.50~~	0.15[e]~~0.20~~	0.33~~0.40~~
	1,700	87	1.40	10.45	88	62	11.0	9.3	1.27	0.51	0.18[e]	0.40
Veal	250	6.69	0.11~~0.14~~	0.79~~1.4~~	96	62	0.26~~0.23~~	0.11~~0.14~~	0.04~~0.22~~	0.03~~0.04~~	0.02~~0.03~~	0.05[d]~~0.06~~
Beef Cattle												
Calf (confinement)	450	48~~26~~	0.76~~0.42~~	5.66~~3.1~~	92	63	3.81~~3.40~~	3.20~~2.88~~	1.06~~0.58~~	0.20~~0.14~~	0.09~~0.10~~	0.16~~0.11~~
	650	69	1.09	8.18	92	63	5.51	4.63	1.54	0.29	0.13	0.23
Finishing High-Range	750	37~~62~~	0.59~~1.0~~	4.40~~7.5~~	92	63~~62~~	2.97~~5.8~~	2.42[d]~~5.2~~	0.60~~1.05~~	0.27~~0.41~~	0.08~~0.14~~	0.17~~0.25~~
	1,100	54~~92~~	0.86~~1.4~~	6.46~~11.0~~	92	63~~62~~	4.35~~8.5~~	3.55[d]~~7.6~~	0.89~~1.50~~	0.40~~0.61~~	0.12~~0.21~~	0.25~~0.36~~
High-energy	~~750~~	~~54~~	~~0.87~~	~~6.5~~	~~92~~	~~62~~	~~4.2~~	~~3.9~~	~~1.40~~	~~0.38~~	~~0.14~~	~~0.22~~
	~~1,400~~	~~80~~	~~1.26~~	~~9.5~~	~~92~~	~~62~~	~~6.2~~	~~5.2~~	~~1.50~~	~~0.54~~	~~0.24~~	~~0.32~~
Cow (confinement)	1,000	92~~63~~	1.46~~1.00~~	10.91~~7.5~~	88	63	11.0~~7.70~~	9.38~~6.00~~	2.04~~1.40~~	0.35~~0.34~~	0.18~~0.19~~	0.29~~0.26~~
Swine												
Nursery	25	1.92~~2.7~~	0.03~~0.04~~	0.23~~0.2~~	89	62	0.21~~0.27~~	0.17~~0.22~~	0.06~~0.09~~	0.02	0.01	0.01
	40	3.0	0.05	0.37	89	62	0.33	0.27	0.10	0.03	0.01	0.02
Finishing Grow-Finish	150	7.49~~5~~	0.12~~0.15~~	0.89~~1.2~~	89	62	0.82~~1.0~~	0.65~~0.90~~	0.23~~0.30~~	0.09~~0.08~~	0.03~~0.05~~	0.04
	180	8.9	0.14	1.07	89	62	0.98	0.78	0.28	0.10	0.04	0.05
	220	10.9	0.18	1.31	89	62	1.20	0.96	0.34	0.13	0.05	0.06
	260	12.8	0.21	1.55	89	62	1.41	1.13	0.41	0.15	0.05	0.08
	300	14.8	0.24	1.79	89	62	1.63	1.30	0.47	0.17	0.06	0.09
Gestating	300~~275~~	6.8~~7.5~~	0.11~~0.12~~	0.82~~0.9~~	91	62	0.61~~0.69~~	0.52~~0.59~~	0.21~~0.23~~	0.05	0.03~~0.04~~	0.04
	400	9.1	0.15	1.10	91	62	0.82	0.70	0.28	0.06	0.04	0.05
	500	11.4	0.18	1.37	91	62	1.02	0.87	0.35	0.08	0.05	0.06
Lactating	375	17.5~~23.5~~	0.28~~0.36~~	2.08~~2.7~~	90	63	1.75~~2.25~~	1.58~~2.03~~	0.58~~0.75~~	0.17~~0.18~~	0.11~~0.13~~	0.13~~0.14~~
	500	23.4	0.37	2.78	90	63	2.34	2.11	0.78	0.22	0.15	0.18
	600	28.1	0.45	3.33	90	63	2.81	2.53	0.93	0.27	0.18	0.21
Boar[e]	300~~350~~	6.2~~7.2~~	0.10~~0.12~~	0.74~~0.9~~	91	62	0.57~~0.66~~	0.51~~0.59~~	0.20~~0.23~~	0.04~~0.05~~	0.03~~0.04~~	0.03~~0.04~~
	400	8.2	0.13	0.99	91	62	0.75	0.67	0.26	0.06	0.05	0.05

RESPONSE:

a.) The phosphorus content of the manure is based on an average of samples taken from five similar dairies as shown on the sheet titled "(b)(6) Dairy Manure Analytical Data Summary" in the MMP in the final PTO for (b)(6) Dairy in the Certified Record p. 7-175. This sample is taken from a common pond where the manure is a mixture of lactating and non-lactating cows. Sand solids were determined to have a P_2O_5 content of 2.2 #/ton and the liquid was determined to have a P_2O_5 content of 4.4 #/1000 gal.

b.) See the sheet titled "(b)(6) Dairy Manure Analytical Data Summary" in the MMP in the final PTO for (b)(6) Dairy in the Certified Record p. 7-175.

3. With respect to Appellee Director's response to #22, produce all documentation for and the complete list of names of the "entities" identified by the Applicant and contacted by Gary Zwolinski.

RESPONSE:

As stated in the Director's response to the Appellants' First Set of Interrogatories and Request for Production of Documents # 22, there are no responsive documents in the Director's legal custody, control, or possession.

The "entities" are as follows: (b)(6)

4. With respect to Appellee Director's response to #25:

a) Explain the ODA's interpretation of "target crop yields based on actual yields" as required by the OAC,

b) Explain whether ODA employees reviewed the FSA Reports used in this Permit to verify the yields.

c) If not, explain how the ODA verified the unrealistic yields in this MMP.

d) We did not find any documentation of yields in the Certified Record as stated in this response. State the specific number(s) of the document(s) in the Certified Record.

RESPONSE:

a.) The Director specifically objects to this interrogatory as vague and overly broad. Appellants have not identified the section in the OAC they refer to in the interrogatory.

Without waiving this objection and in the interest of cooperation the Director responds as follows: "actual yields" can be a county average or a farm average. "Target crop yields" are a potential yield that is desired. The actual nutrient management will be adjusted based on actual yields as the plan progresses.

b.) The Director specifically objects to this interrogatory as not relevant to the subject matter involved in the pending action and as asked and answered in the Director's response to

4B-1

FIELD ID	PLANNED CROP				
	2005	2006	2007	2008	2009
36	Corn	Soybeans	Corn Silage	Soybeans	Corn Silage

lanned Crop Yields

Crop	Yield Goal (Fields 1 - 13)	Yield Goal (Fields 14-29)	Yield Goal (Fields 30-31)	Yield Goal (Fields 32-35)	Yield Goal (Field 36)
Corn	--	210 (bu/ac)	190 (bu/ac)	--	--
Soybeans	45 (bu/ac)	65 (bu/ac)	50 (bu/ac)	45 (bu/ac)	50 (bu/ac)
Wheat	80 (bu/ac)	100 (bu/ac)	70 (bu/ac)	75 (bu/ac)	--
Alfalfa	6 (tons/ac)	6 (tons/ac)	--	--	--
Popcorn	--	5,000 (lb/ac)	--	--	--
Corn Silage	24 (tons/ac)	25 (tons/ac)	25 (tons/ac)	25 (tons/ac)	26 (tons/ac)

litrogen and Phosphorus Risk Assessment

Field	Subfield	Soluble P Risk	N Leaching Risk
36	A	Very High	Hig
36	B	Very High	Hig
36	C	Very High	Hig
25	A	High	Hig
25	B	High	Hig
35	A	Medium	Hig
34	A	Medium	Hig
23	A	Medium	Hig
23	B	Medium	Hig
34	D	Medium	Hig
20	A	Medium	Hig
20	B	Medium	Hig
29	A	Medium	High
29	B	Medium	High
34	E	Medium	High
33	B	Medium	High
34	C	Medium	High
21	A	Medium	High
24	A	Medium	High
24	B	Medium	High
33	A	Medium	High
22	A	Medium	High
22	B	Medium	High
34	B	Medium	High
33	C	Medium	High
14	A	Medium	High
14	B	Medium	High
32	A	Medium	High
32	B	Medium	High
19	A	Medium	High

Where did they come up w/ these crop yields? No where near candy averages and I would ask to see some historical data to get these as realistic

102-13

THE OHIO STATE UNIVERSITY EXTENSION

WELCOME TO THE WOOD COUNTY

AGRICULTURAL & NATURAL RESOURCES

PROGRAM

AgNR

4B-3

August 16, 2007

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Wood County Ag Update Newsletter

Soybean Rust Information

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Weekly Crop Report

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WELCOME

All About Agriculture in Wood County

ALAN SUNDERMEIER
EXTENSION EDUCATO

CRAIG EVERETT
PROGRAM ASSISTANT
HORTICULTURE

CHERYL YOUNG
NATURAL RESOURCES
OFFICE ASSISTANT

2006
Number of Farms - 1,040
Average Farm Size - 292 Acres
Total Land in Farms - 304,000 Acres
Commercial Grain Storage Capacity - 13,610,000 Bushels

Livestock	Number	Rank By Sales	U.S. Rank
All Cattle & Calves	5500	-	76
Milk Cows	1100	-	53
All Hogs & Pigs	-	-	-
All Sheep & Lambs	-	-	-

2006 Crops	Acres Harvested	Yield	Production	Rank
Corn for Grain, Bu.	85,000	157.40	13,382,100	6
Soybeans, Bu.	136,700	45	6,157,100	5
Wheat, Bu.	57,300	72.3	4,141,000	1
All Hay, Ton	5300	3.98	21,100	65
Tomatoes, Ton	730	21.59	15,760	4

Wood County Crop Yields (bu/acre)

YEAR	CORN	SOYBEANS	WHEAT
1997	145.9	45.9	70.3
1998	156.7	49.2	67.1
1999	142.7	40.4	74.2
2000	141.0	39.7	79.1
2001	119.0	30.0	73.3
2002	90.3	34.5	68.8
2003	180.3	40.1	76.1

CORN

2004	164.1	46.4	72.4
2005	171.8	46.1	78.1
2006	157.4	45	72.3
10 Yr. Avg.	146.92	41.73	73.17

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NASS-Ohio Reports & Statistics

SPECIAL EVENTS 

2007 FARM FOCUS FIELD DAY

PESTICIDE RECORDKEEPING 

Downloadable Pesticide Spray Record PDF FILE

Downloadable Pesticide Field Scouting Records

Downloadable Excel Pesticide Spray Record Sheet

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CONNECTIONS TO OSU NEWSLETTERS 

The following are some agricultural and natural resource newsletters you may find helpful. When you are on-line, just point and click on the newsletter you want to visit.

C.O.R.N. Crop Observation and Recommendation Network (published weekly)

VegNet (published weekly during the season)

Buckeye Yard & Garden Newsletter (published weekly during the season)

Ohio Grape Newsletter (published monthly)

Ohio Fruit ICM Newsletter (published weekly during season)

Ohio Beef Cattle Newsletter (published monthly)

Ohio Beef Cattle Newsletter Archives

Buckeye Dairy News (published bi-monthly)

Livestock Outlook (published monthly)

Meat Goat Newsletter (published quarterly)

Grain Marketing Outlook Newsletter (published monthly)

FIELD ID	PLANNED CROP				
	2007	2008	2009	2010	2011
33	Corn	Soybeans	Wheat	Corn Silage	Soybeans
34	Corn	Soybeans	rn Silage	Soybeans	Corn Silage
35	Corn	Soybeans	Wheat	Corn Silage	Soybeans

Planned Crop Yields

Crop	Yield Goal (Fields 1 - 13)	Yield Goal (Fields 14-29)	Yield Goal (Fields 30-31)	Yield Goal (Fields 32-35)
Corn	–	210 (bu/ac)	190 (bu/ac)	–
Soybeans	45 (bu/ac)	65 (bu/ac)	50 (bu/ac)	45 (bu/ac)
Wheat	80 (bu/ac)	100 (bu/ac)	70 (bu/ac)	75 (bu/ac)
Alfalfa	6 (tons/ac)	6 (tons/ac)	–	–
Popcorn	–	5,000 (lb/ac)	–	–
Corn Silage	24 (tons/ac)	25 (tons/ac)	25 (tons/ac)	25 (tons/ac)

Nitrogen and Phosphorus Risk Assessment

Field	Subfield	P Soil Test Risk	N Leaching Risk
20	B	High	High
6	B	Medium	High
29	B	Medium	High
35	A	Medium	High
34	A	Medium	High
25	B	Medium	High
34	D	Medium	High
9	A	Medium	High
9	B	Medium	High
3	A	Medium	High
23	B	Medium	High
34	E	Medium	High
13	C	Medium	High
13	E	Medium	High
23	A	Medium	High
31	E	Medium	High
24	B	Medium	High
34	C	Medium	High
3	C	Medium	High
32	E	Medium	High
32	D	Medium	High
25	A	Medium	High
6	A	Medium	High
31	C	Medium	High
31	D	Medium	High

4C-1

BNA Essential Information Smart Analysis

EPA Proposing Rule to Require Animal Feeding Operations to Provide Data

Wednesday, October 19, 2011
from Daily Environment Report™

By Linda Roeder

The Environmental Protection Agency released a proposed rule Oct. 18 that would require animal feeding operations to submit a range of data to regulators, including information on the number and type of animals on site and the number of acres available for land application of manure.

EPA said the proposed rule would improve its ability to ensure that concentrated animal feeding operations (CAFOs) are complying with the Clean Water Act under the National Pollutant Discharge Elimination System permit program. The agency plans to issue a final rule by July 2012.

The proposal contains a detailed table setting thresholds for large, medium, and small CAFOs for cattle, swine, horses, sheep, chickens, and other livestock. An animal feedlot is considered a CAFO if it falls into the large or medium categories.

EPA agreed to issue the information collection rule as part of a settlement agreement reached in May 2010 that resolved a lawsuit filed by environmental groups.

The agreement was reached with the National Resources Defense Council, Waterkeeper Alliance, and Sierra Club, which objected to a 2008 EPA final rule (*NRDC v. EPA*, 5th Cir., No. 08-61093, settlement reached 5/16/10; 101 DEN A-10, 5/27/10).

Two Reporting Options

The proposal contains two options regarding which facilities would have to provide information to EPA. One would require every CAFO to report information to EPA unless a state with an authorized NPDES program voluntarily chooses to collect the information. The second option would require CAFOs in watersheds with water quality concerns associated with CAFOs to report information directly to EPA.

Required information would include facility contact, location, whether the facility has NPDES permit coverage, the number and type of animals, and the number of acres available for land application of manure. Both options would apply to unpermitted and permitted CAFOs.

EPA estimates that a CAFO will need one hour to collect and submit the required information. Based on an estimated 20,000 CAFOs in the United States (both permitted and unpermitted), the collective reporting burden would be about $200,000, the agency said.

EPA also said it is seeking comment on alternative approaches for gathering the information, including the use of existing data sources, the use of alternative mechanisms for promoting environmental stewardship and compliance, and the use of state reporting.

Tightened Oversight

Under the settlement, EPA agreed to tighten oversight of animal feedlots where releases of bacteria, viruses, and parasites from animal waste can pollute nearby waterways. According to EPA, CAFOs are a significant source of nutrient pollution and pathogens in U.S. waters.

The 2008 revised rule required NPDES permits only from CAFOs that discharge or propose to discharge pollutants. The 2008 revisions allow CAFO owners and operators to determine case-by-case whether or not permit coverage is required for their facilities. The rule revised NPDES permit regulation and effluent limitations guidelines for CAFOs (73 Fed. Reg. 70,418).

In its 2008 final rule, EPA said it revised its 2003 regulations to address a 2005 decision by the U.S. Court of Appeals for the Second Circuit in *Waterkeeper Alliance v. EPA* (399 F.3d 486 (2005)). The court directed EPA to require nutrient management plans from CAFOs that apply for an NPDES permit, and to allow these plans to be reviewed by permitting authorities and the public. The court also ordered EPA to eliminate the requirement that all CAFOs apply for an NPDES permit.

Five-Year Updates

Under the settlement, EPA agreed to propose within one year a rule to require all concentrated animal feeding operations to submit details to the agency about their operations and to update the information every five years (55 DEN A-9, 3/22/11).

Environmental groups said the 2008 rule would effectively exempt thousands of factory farms from taking steps to minimize water pollution from the animal waste they generate.

Alexandra Dunn, executive director of the Association of Clean Water Administrators, told BNA in an e-mail that states have been "overall supportive" of inventorying CAFO facilities, but they have had some concerns about who would be responsible for collecting the information. Dunn said she has asked ACWA members for immediate feedback and said the association will comment on the proposal.

Comments on the proposed rule will be due 60 days after it is published in the Federal Register.

4D-1

- ***Manure incorporation/injection***—Rapidly incorporating manure into the soil after spreading by plowing or disking—or injecting manure liquids or slurries directly into the soil—reduces odor, ammonia emissions, and the potential for runoff to surface waters. However, incorporation/injection may also increase the risk of nitrogen leaching to ground water.
- ***Comprehensive nutrient management***—Nutrient management matches the combined nutrient applications from manure and commercial nutrient sources to crop needs so that as few nutrients as possible are lost to the environment.

An important characteristic of most of these practices is that in reducing one type of emission, they may increase another type of emission. Such interactions can have an important bearing on the design of policies for protecting environmental quality.

Policy Responses

Federal, State, and local governments have responded to the environmental problems posed by animal operations through a variety of regulations and conservation programs (see AREI Chapter 5.7). The Environmental Protection Agency introduced new Clean Water Act regulations in 2003 for controlling runoff of manure nutrients from the largest animal feeding operations. Concentrated animal feeding operations (CAFOs, defined as those operations requiring a pollution discharge permit) develop and implement a nutrient management plan that bases nutrient applications on agronomic rates. This provision requires CAFOs to spread their manure over a much larger land base than they are currently using, and most will need to move their manure off farm. Livestock and poultry farms' annual net income could decline by more than $1 billion (3.2 percent) if crop producers are reluctant to use manure as a nutrient source (Ribaudo et al., 2003).

USDA is using voluntary approaches such as education and financial incentives to encourage improved manure handling practices on all AFOs. Sixty percent of Environmental Quality Incentive Program (see AREI Chapter 5.4) funds are earmarked to environmental concerns on animal operations.

Many States have enacted regulations that address environmental issues associated with Animal Feeding Operations (AFOs), including some not addressed at the Federal level. Some States had manure land application requirements in place prior to EPA's 2003 regulations, with coverage often extended to smaller AFOs. Odor is a persistent local issue, and many States are using setback requirements to separate animal operations from residential areas. Ammonia emissions from large animal feeding operations have prompted California to enact regulations in the San Joaquin Valley to protect heavily populated areas downwind.

Endnotes

[1]U.S. EPA's assessment relies on State self-reporting, which is incomplete and inconsistent between States (U.S. GAO, 2000). The Clean Water Act required that such a report be submitted to Congress every 2 years.

4D-2

901:10-2-13 Contents of manure management plan: soil characterization.

The manure management plan shall contain information on the soil of the land application areas. Soil samples shall be analyzed to plan for nutrient utilization at recommended agronomic rates and to minimize nutrient runoff to waters of the state. Soil shall be sampled and analyzed by utilizing the following procedures:

(A) At a minimum, soil samples shall be taken to a uniform depth of eight inches and the fertility analysis shall include: pH, phosphorus, potassium, calcium, magnesium and cation exchange capacity.

(B) Soil fertility analysis shall be conducted in accordance with Publication 221, "Recommended Chemical Soil Test Procedures for the North Central Region; Published by the North Central Regional Committee on Soil Testing and Plant Analysis (NCR-13), North Dakota Agricultural Experiment Station."

(C) Soil samples shall be representative of a land application site with one composite soil sample representing no more than twenty-five acres or one composite soil sample for each land application site, whichever is less.

(D) The manure management plan shall specify the soil sampling frequency in accordance with the following requirements:

(1) A site that receives manure shall be soil tested, at a minimum, once every three years and

(2) If any land application site is used by the owner or operator the land application site shall be sampled at least six months following application.

(E) Results of the soil sampling events in paragraphs (A) to (D) of this rule shall be recorded in the operating record in accordance with rule 901:10-2-16 of the Administrative Code and shall include the location of the soil sample collection site, the depth of the sample collected and the analysis.

(F) In developing appropriate manure application rates for land application methods in accordance with rule 901:10-2-14 of the Administrative Code, the owner or operator shall use the Bray P1 soil test level or equivalent appropriate phosphorus soil test,(Mehlich III, Olsen, phosphorus retention test), or other test methods approved by the director. The owner or operator shall choose a phosphorus soil test method and identify the selected method in the manure management plan.

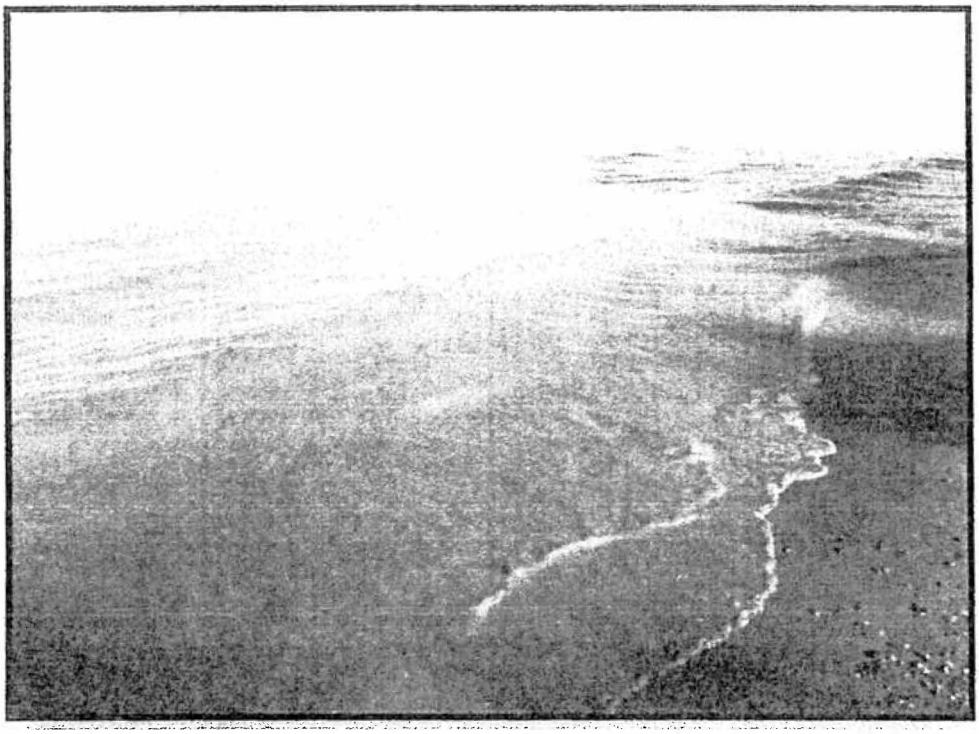
Effective: 01/23/2009

4D-3

Environmental
Protection Agency

Division of Surface Water

Ohio Lake Erie Phosphorus Task Force Final Report



Ted Strickland, Governor
Lee Fisher, Lt. Governor
Chris Korleski, Director

Acknowledgements

The Ohio Lake Erie Phosphorus Task Force was comprised of the following members:

- Ohio Farm Bureau Federation – Larry Antosch
- Heidelberg University, National Center for Water Quality Research – Dave Baker, Jack Kramer and R. Peter Richards
- Ohio State University, Environment and Natural Resources – Nick Basta, Libby Dayton
- Ohio State University, College of Biological Sciences – David Culver
- Ohio State University Sea Grant – Jeff Reutter
- Ohio State University Extension – Robert Mullen
- U.S. EPA, Great Lakes National Program Office – Paul Bertram
- University of Toledo – Thomas Bridgeman
- U.S. Geological Survey – Dan Button
- Natural Resource Conservation Service – Steve Davis, Mark Scarpitti
- Ohio Department of Agriculture – Kevin Elder
- U.S. Department of Agriculture, Agriculture Research Service – [redacted]
- Conservation Action Project and Henry County SWCD – Todd Hesterman
- Northeast Ohio Regional Sewer District – Seth Hothem
- Ohio Department of Natural Resources, Soil and Water – John Kessler
- Ohio Department of Natural Resources, Wildlife – Roger Knight
- Case Western Reserve University – Gerald Matisoff
- Ohio Lake Erie Office – Chris Riddle
- Ohio Academy of Science/Ohio Fractured Flow Work Group– Julie Weatherington-Rice
- Ohio Environmental Protection Agency, Surface Water – Gail Hesse (Chair), Julie Letterhos and Rick Wilson

Observers

- Eric Partee, Little Miami Inc.
- Joe Logan, Ohio Environmental Council
- (b)(6)

The Task Force would like to thank all the invited presenters who shared their expertise with the group. Presenters included: Amy Jo Klei, Erin Sherer, Robert Miltner, Randy Bournique and Trinka Mount from Ohio EPA; Dan Mecklenburg and Kirk Hines from ODNR; Kevin King from USDA, Agricultural Research Service; Chris Wible from The Scotts Miracle-Gro Company; Joe DePinto from Limnotech; Robert Bonnett from the Northeast Ohio Regional Sewer District; Jim Stafford and Mike Monnin from NRCS; and John Crumrine from Heidelberg University.

The Task Force would like to thank Bob Heitzman of Ohio EPA for maintaining the Phosphorus Task Force Web site. All presentations, minutes, handouts and other information, including an executive summary of this report, can be found at: *www.epa.ohio.gov/dsw/lakeerie/ptaskforce/index.aspx.*

Finally, the Task Force would like to thank Ohio EPA Director Chris Korleski for sponsoring and supporting the work of the Task Force.

Table 5 — Current critical soil test phosphorus levels for corn, soybean, wheat and alfalfa. (OSU Extension Bulletin E-2567)

Crop	Critical level ppm (lb/acre)
Corn	15 (30)
Soybean	15 (30)
Wheat	25 (50)
Alfalfa	25 (50)

Ohio fertilizer recommendations are based upon a build-up, maintenance, drawdown concept. Soils with soil test phosphorus levels below the critical, receive recommendations designed to increase the soil test to the critical level within four years. Soils with soil test phosphorus levels at or slightly above (plus 15 ppm or 30 pounds per acre), receive a recommendation designed to replace crop removal so as to maintain current soil test levels. Soils with soil test phosphorus levels well above the critical (> 15 ppm or 30 pounds per acre), receive recommendations that decrease the recommended phosphorus rate to reduce soil test levels. Soil with soil test levels well above the critical (≥ 40 ppm or 80 pounds per acre for corn and soybeans), receive a phosphorus recommendation of zero.

Many land grant universities do not utilize the build-up, maintenance, and drawdown approach to phosphorus recommendations. However, due to spatial variability in soil test phosphorus, the Tri-State continues to endorse the build-up, maintenance, and drawdown approach. Fields that have soil test levels near or just slightly above the current critical level are likely to have areas of the field where soil test P is below the critical. In order to ensure that these areas are as productive as possible, the field still receives a phosphorus recommendation. Current Tri-State phosphorus recommendations for corn and soybeans are present in Tables 6 and 7.

Table 6 — Current Tri-State phosphorus recommendations for corn. (OSU Extension Bulletin E-2567)

Soil test ppm (lb/acre)	Yield potential (bu/acre)				
	100	120	140	160	180
	lb P_2O_5 per acre				
5 (10)	85	95	100	110	115
10 (20)	60	70	75	85	90
15-30 (30-60)	35	45	50	60	65
35 (70)	20	20	25	30	35
40 (80)	0	0	0	0	0

Table 7 — Current Tri-State phosphorus recommendations for soybeans. (OSU Extension Bulletin E-2567)

Soil test ppm (lb/acre)	Yield potential (bu/acre)				
	30	40	50	60	70
	lb P_2O_5 per acre				
5 (10)	75	80	90	100	105
10 (20)	50	55	65	75	80
15-30 (30-60)	25	30	40	50	55
35 (70)	10	15	25	25	30
40 (80)	0	0	0	0	0

Crops

Revisit soil fertility: Put organic nutrients to work

Question:
What's new in manure management?

Kevin Elder: Years ago, while I was working for the Fairfield Soil and Water Conservation District, the Soil Conservation Service technician wisely told me, "If you don't like the way things are going, just wait awhile and they will complete the circle and be back to the way it was."

Today we are relearning how to use manure, compost, biosolids and other organic nutrients to replace commercial fertilizers that have been used extensively for the past 50 years.

Question:
Do larger operations offer new opportunities?

Elder: Many livestock farms, as they become larger, generate more nutrients than they can utilize on their own crop ground. More and more of those facilities are working with neighboring crop farms or manure brokers and custom applicators to make better use of those nutrients.

Some of these farming operations are transporting manure as far as 90 miles away.

Question:
How can I put soil tests to work on my farm?

Elder: Make sure you know the nutrient requirements of your fields. According to Ohio State University testing criteria, a soil test should represent no more than a 25-acre area. That soil test should be taken before spreading or else not until six months after organic nutrients have been applied to allow for those nutrients to assimilate into the soil.

Prioritize the fields receiving manure to those testing lower on phosphorus and potassium first. Restrict applications on fields testing above 50 ppm phosphorus.

Ask a CCA

Question:
How do I know the nutrient content of the manure?

ELDER

Elder: Each type of manure should be sampled in a manner to best reflect the method of application. Liquid materials should be thoroughly agitated before collecting samples. Dry materials should be mixed to get a representative sample of moisture and nutrients.

Sampling at various field application points will probably give the best indication of actual nutrients applied. Using several years of historical manure tests provides better average nutrient values.

Question:
What application precautions need to be taken?

Elder: Maintain the setbacks from waters of the state, residences, wells, etc. For manure, a 35-foot vegetated filter is needed from waters of the state or a 100-foot buffer if surface-applied where no vegetated filter is present.

Also, know the weather forecasts. If more than a 50% chance of one-half inch of rain is predicted, do not apply without incorporating.

Know the soil moisture conditions when applying. If applying a liquid material, do not exceed the available water-holding capacity of the soil. Also, do not cause ponding, runoff or movement to tile, or compaction of the soil.

Question:
Will a cover crop help?

Elder: If more than 50 pounds of nitrogen are applied before Oct. 1, establish a cover crop to utilize that N and minimize losses to the environment. Do not apply on frozen or snow-covered soil.

Question:
Any other tips?

Elder: Keep good records of what was done. If you have questions, ask! Certified Crop Advisers, Certified Livestock Managers, Soil and Water Conservation Districts, or OSU Extension staff members are good sources of information.

Question:
What other benefits come from using organic nutrients?

Elder: Organic nutrients provide much more than just nitrogen, phosphorus and potassium to the soil. Important micronutrients, organic matter, lime and biological activity in the material can greatly improve soil water-holding capacity and quality.

While researching the history of tile drainage and the age of different types of tile in a very old book, I ran across a story about an immigrant farmer in New York in the early 1800s who bought old, rundown farms and took what everyone then considered waste. He hauled manure and other organic waste, drained the fields, planted cover crops and rotations, and became very successful. He understood the needs of the land. It seems like we constantly have to relearn some of those lessons.

Meet the adviser

Kevin Elder,
executive director, ODA Livestock Environmental Permitting Program
614-387-0470
elder@mail.agri.state.oh.us

There are more than 550 Certified Crop Advisers in Ohio certified through an international program to enhance the professional advice farmers receive. If you have a question for a CCA, e-mail it to the editor at [illegible]@farmprogress.com.

FORM 3900-PTO-005, PART 17: MANURE MANAGEMENT PLAN (May 11, 2006)

LAND APPLICATION

The following describes the procedures to be used in this MMP for land application as required by Rule 901:10-2-14.

APPLICATION PROCEDURES:

In the space provided below, briefly describe the general application methods that will be utilized by your facility. This shall include the type of equipment for application, type of equipment for incorporation or injection, type of equipment to be utilized for transportation to fields, approximate number of days/loads needed to land apply the annual manure produced, whether land application will be performed by a custom applicator, etc. *Note: If Distribution and Utilization is utilized for all manure, please answer as "N/A."*

The primary method of application of manure to acres owned by the facility will be through irrigation. Currently, the facility operates a pull type irrigation gun, which is used to irrigate an alfalfa/hay crop and may be used to irrigate standing corn in a continuous corn rotation as needed. With the changes to the manure management system at the facility, the manure from pond #2 will be irrigated, while the manure from pond #1 will be distributed off the farm. The manure in pond #2 will be less nutrient dense, in particular phosphorus, compared to the manure in pond #1, which is related to how the manure is to be managed. All the manure from the production facilities is pumped to pond #1. The solids in the manure are allowed to settle for a period of time and then the liquid from pond #1 is pumped to pond #2 for further storage.

The manure to be distributed off the farm will be either land applied by a custom applicator to neighboring farm fields utilizing a dragline application system or slurry tanks, or the manure will be distributed to local farmer(s) who will land apply the manure to their farm fields that may be further from the production facility. The application method for the local farmer is dependent on the equipment they choose to transport and apply the manure.

If soil test phosphorus levels [illegible] soil tests are shown to decrease over time, a center pivot may be installed that will make it easier for the operator to irrigate on those acres.

Currently, in order to keep the 71 acres at the facility site, which are considered as "high" based on the phosphorus index risk assessment procedure, in this manure management plan, the following condition must be met; as provided by the ODA LEPP office. Soil samples of the (b)(6) 71 acres shall be taken during the mid point of this permit and reviewed by an ODA inspector. The sample results shall show decreased levels of soil phosphorus (P) based on the same lab test procedure (Bray PI) identified on the soil reports included with this manure management plan (MMP). If the soil P levels are not shown to be decreasing, the acreage shall be removed from the MMP for the remainder of the permit, until such time that the soil test P levels allow for manure application under the Soil Test P risk assessment procedure.

Use **FORMS 7A & 7B of the Operating Record**, or your own approved forms, to record all of the following to satisfy the Rules listed and NPDES requirements:

1. Field observations of liquid manure applications, based on Available Water Capacity. Rules 901:10-2-16[A][1][c][iii], 901:10-2-16[A][1][c][iv], and 901:10-2-14.
2. Soil survey maps for all land application sites. Rule 901:10-2-16[A][1][c][v].
3. Cropping schedules. Rule 901:10-2-16[A][1][c][viii].
   a. Past Year
   b. Current Year
   c. Anticipated 2-Year projection for planned crop

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LIVESTOCK PROGRAM

MMP 15 - 16 Soil Test P Evaluation

P-SOIL TEST EVALUATION

FACILITY: (b)(6) Farms
DATE: 1/15/2009

NOTES:

(1) Based upon NRCS Conservation Practice Standard Code 590, Table 3.
(2) Planned acreage where current soil test are available. P soil test levels reported in Mehlich III or Bray P1.
(3) No manure to be applied to these field areas where P levels >182 ppm (Mehlich III), unless P-index performed.
(4) No manure to be applied to these field areas where P levels >150 ppm (Bray I), unless P-index performed.
(5) All fields rated high due to likely presence of systematic tile.

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LIVESTOCK PERMITTING

CRITICAL UPPER SOIL TEST LEVEL, M-III ppm-P = 182
CRITICAL UPPER SOIL TEST LEVEL, Bray P1 ppm-P = 150
CRITICAL LOWER SOIL TEST LEVEL, ppm-P = 45

AVERAGE PPM P ANNUAL SOIL TEST CHANGE =

SOIL TEST INFORMATION-AT BEGINNING OF ROTATION

Test Date	Field ID	SAMPLE ID	Lab No.	TEC	pH	Bray P1 ppm-P	M III ppm-P	Predicted Soil Test Levels: Rotational Length of 1 years Soil Test ppm-P Expected at Rotation End	Rotational Length of 2 years Soil Test ppm-P Expected at Rotation End	Rotational Length of 3 years Soil Test ppm-P Expected at Rotation End	Rotational Length of 4 years Soil Test ppm-P Expected at Rotation End	Rotational Length of 5 years Soil Test ppm-P Expected at Rotation End	Acres	Acres for Manure App.	Years to Reach 182 ppm M-III P	Years to Reach 150 ppm Bray I P	NLI
Facility Site Farm																	
6/23/2008	FS-1	A	243-1	16.08	6.8	365		[illegible]	360.0	357.6	355.0	349.1	11.60	11.60		58.08	High
	FS-1	B	244-1	16.15	7.0	350		347.5	345.0	342.5	340.0	334.1	3.72	3.72		60.07	High
	FS-1	AW	245-1	9.84	6.4	340		337.5	335.0	332.5	330.0	324.1	6.21	6.21		78.07	High
	FS-1	BS	246-1	16.37	6.6	310		307.5	305.0	302.5	300.0	294.1	3.97	3.97		64.06	High
	FS-2	AN	247-1	7.73	5.7	219		216.5	214.0	211.5	209.0	203.1	15.14	15.14		27.62	High
	FS-2	AB	248-1	7.22	5.6	347		344.5	342.0	339.5	337.0	331.1	19.48	19.48		78.87	High
	FS-2	BS	249-1	17.59	6.7	335		332.5	330.0	327.5	325.0	319.1	4.34	4.34		74.07	High
	FS-2	CS	250-1	16.47	6.4	332		329.5	327.0	324.5	322.0	316.1	4.34	4.34		72.87	High
(b)(6) arm West													71.00	71.00			
6/23/2008	BW-1	AN	224-1	8.82	5.7		35	33.5	31.0	28.5	26.0	20.1	7.18	7.18	-58.48		High
	BW-1	BN	225-1	18.27	6.8		64	61.5	[illegible]	56.5	54.0	48.1	4.79	4.79	-47.24		High
	BW-1	CN	226-1	13.84	6.60		25	22.5	[illegible]	17.5	15.0	9.1	6.32	6.32	-52.84		High
	BW-1	AS	227-1	9.46	6.30		28	25.5	[illegible]	20.5	18.0	12.1	10.19	10.19	-51.08		High
	BW-1	BS	228-1	16.29	6.40		53	50.5	[illegible]	45.5	43.0	37.1	3.99	3.99	-51.64		High
	BW-1	CS	229-1	16.82	7.60		14	11.5	[illegible]	6.5	4.0	-1.9	3.26	3.26	-57.26		High
	BW-2	A	230-1	14.11	6.80		17	14.5	[illegible]	9.5	7.0	1.1	3.53	3.53	-56.08		High
	BW-2	B	231-1	17.13	7.50		49	46.5	[illegible]	41.5	39.0	33.1	1.54	1.54	-53.26		High
	BW-2	C	232-1	12.31	7.00		66	63.5	[illegible]	58.5	56.0	50.1	4.23	4.23	-46.44		High
(b)(6) arm East													45.03	45.03			
6/23/2008	BE-1	AW	233-1	9.22	0.80		37	34.5	32.0	29.5	27.0	21.1	28.50	28.50	-58.08		High
	BE-1	BW	234-1	13.43	6.80		24	21.5	19.0	16.5	14.0	8.1	10.91	10.91	-53.26		High
	BE-1	AE	235-1	10.82	6.60		16	13.5	11.0	8.5	6.0	0.1	20.02	20.02	-56.46		High
	BE-1	BE	236-1	16.32	6.70		40	37.5	35.0	32.5	30.0	24.1	18.67	18.67	-55.85		High
	BE-2	AW	237-1	16.08	7.00		16	13.5	11.0	8.5	6.0	0.1	24.05	24.05	-56.46		High
	BE-2	BW	238-1	20.87	6.90		27	24.5	22.0	19.5	17.0	11.1	15.91	15.91	-52.06		High
	BE-2	AE	984-1	16.03	6.70		24	21.5	19.0	16.5	14.0	8.1	23.75	23.75	-53.26		High
	BE-2	BE	985-1	22.64	6.20		81	78.5	76.0	73.5	71.0	65.1	17.54	17.54	-40.44		High
	BE-3	AW	988-1	16.94	7.20		30	27.5	25.0	22.5	20.0	14.1	27.99	27.99	-50.85		High
	BE-3	BW	987-1	16.63	6.70		44	41.5	39.0	36.5	34.0	28.1	11.96	11.96	-55.25		High
	BE-3	ANE	239-1	18.74	6.90		16	13.5	11.0	8.5	6.0	0.1	18.50	18.50	-56.46		High
	BE-3	BNE	240-1	18.40	8.10		59	56.5	54.0	51.5	49.0	43.1	3.50	3.50	-49.24		High
	BE-3	ASE	241-1	13.29	6.70		26	23.5	20.0	17.5	15.0	9.1	13.46	13.46	-52.86		High
	BE-3	BSE	242-1	17.24	6.90		72	69.5	67.0	64.5	62.0	56.1	5.82	5.82	-44.04		High
(b)(6) West Farm													238.60	238.60			
	SW-1	AW	166-1	16.91	7.40		78	75.5	73.0	70.5	68.0	62.1	28.10	28.10	-41.64		High
	SW-1	BW	167-1	16.64	7.00		99	96.5	94.0	91.5	89.0	83.1	13.01	13.01	-33.23		High
	SW-1	AE	168-1	16.63	6.80		39	36.5	34.0	31.5	29.0	23.1	21.56	21.56	-37.25		High
	SW-1	BE	169-1	16.17	6.80		76	73.5	71.0	68.5	66.0	60.1	14.61	14.61	-42.44		High
(b)(6) East Farm													75.30	75.30			
	SE-1	AW	170-1	13.30	6.60		35	32.5	30.0	27.5	25.0	19.1	17.55	17.55	-58.85		Hi
	SE-1	BW	171-1	19.05	6.60		76	73.5	70.0	67.5	65.0	59.1	23.72	23.72	-42.84		
	SE-1	AM	172-1	12.45	6.40		46	43.5	41.0	38.5	36.0	30.1	24.32	24.32	-54.45		
	SE-1	BM	173-1	17.77	6.60		60	57.5	55.0	52.5	50.0	44.1	13.17	13.17	-48.84		
	SE-1	AE	174-1	10.11	6.90		47	44.5	42.0	39.5	37.0	31.1	27.67	27.67	-54.05		
	SE-1	BE	175-1	17.91	6.50		74	71.5	69.0	66.5	64.0	58.1	5.97	5.97	-43.24		
													112.80	112.80			

40-1

4D-7

Erlewine, Kristina

From: Zwolinski, Gary
Sent: Wednesday, June 25, 2008 4:11 PM
To: Andy Ety ; Bailey, Patrick; Kevin Elder
Subject: FW: (b)(6) Dairy Soil Test Results Comparison
Attachments: (b)(6) Farms phosphorus explanation 062508.pdf; Soil_Test_(b)(6) Farms_2004_05_06_07_08-2 for rison.xls

I don't see where this explains how certain fields changed hundreds of #/a and some stayed the same during the same time frame. See the blue, these fields stayed basically the same between the change '05-'07. The yellow changed drastically.

Gary Zwolinski, P.E.

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Reynoldsburg, Ohio 43068

614-728-4215
614-728-6335 - fax

zwolinski@agri.ohio.gov

From: Stephanie Tudor (b)(6)
Sent: Wednesday, June
To: Zwolinski, Gary
Cc: Mike Brugger
Subject: (b)(6) Dairy Soil Test Results Comparison

Gary,

Attached is the explanation regarding (b)(6) Dairy's phosphorus differences, which was prepared by Bill Bauer of Nester Ag-Management. There is also a spreadsheet attached that makes comparisons between years for the fields. Please let me know if you need anything else.

Thanks - Stephanie

Stephanie Tudor
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4E-1

901:10-2-14 Contents of manure management plan: land application methods.

This rule establishes best management practices that govern land application of manure on land application areas . The land application of manure at each land application area shall be conducted to utilize nutrients at agronomic rates, and to minimize nutrient runoff to waters of the state and shall be recorded in the operating record in accordance with rule 901:10-2-16 of the Administrative Code. The discharge of manure to waters of the state from a facility as a result of application of that manure by the facility to land application areas is a discharge from that facility subject to NPDES requirements except where it is an agricultural stormwater discharge. Where manure has been applied in accordance with this rule and an approved manure management plan, a precipitation-related discharge of manure from land application areas is agricultural stormwater discharge.

Excerpts ~

(E)(3)(b))No manure application shall occur on frozen or snow-covered ground;

(G) General criteria for frozen and snow-covered ground. In addition to complying with all of the criteria in paragraphs (A) to (F) of this rule, the following actions are required for surface application of manure to land with frozen or snow-covered ground.

If manure can be injected or incorporated then the land application site is not frozen or snow covered and therefore subject to paragraphs (A) to (F) of this rule.

The owner or operator shall comply with rule 901:10-2-08 of the Administrative Code and this rule and use best efforts to avoid surface application of manure to frozen or snow covered ground by ensuring enough manure storage capacity by November of each year for a minimum of one hundred twenty to one hundred eighty days.

Manure injection or manure incorporation performed within twenty-four hours at the land application site is the preferred alternative to surface application of manure. Solid manure with less than fifty per cent moisture shall be stockpiled at the land application site in lieu of manure application on frozen or snow covered ground.

Surface application of manure on frozen or snow-covered ground is prohibited unless performed in accordance with all of the following requirements in paragraph (G)(1) of this rule.

(1) Application.

(a) Prior approval for each surface application of manure shall be obtained from the director or his designated representative.

(b) Except as required by paragraph (G)(1)(g) of this rule, the application rate is limited to ten wet tons per acre for solid manure with more than fifty per cent moisture.

(c) Except as required by paragraph (G)(1)(g) of this rule, the application rate is limited to five thousand gallons per acre for liquid manure.